

Express Mail No. EL936643593US
Attorney Docket No. 5603.02

Please amend claim 14 as follows:

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14. (Amended) The corrugated pipe connector insert of claim 12, wherein said push-ring has a diameter of no more than approximately one inch greater than Ds.

REMARKS

Claims 1-19 are pending in the application, with claims 1, 10, and 17 being independent claims. In brief review, the Examiner objected to informalities cited in the disclosure, claims 1-9 are rejected under 35 U.S.C. § 112, second paragraph, and claims 1-19 are rejected as obvious under 35 U.S.C. § 103.

By Amendment and Response to all rejections under 35 U.S.C. § 112 and 35 U.S.C. § 103; it is respectfully submitted that the rejected claims are not indefinite, not anticipated by prior art, and are not obvious in light of prior art.

I. Voluntary Amendments

Claim 1 is amended to correct the omission of a semicolon in line 4 on page 13 and the word "and" in line 7 on page 13. Claim 10 is amended in lines 43 and 49 on page 14 to give the words "bell formed ends" proper antecedent basis. Claim 10 is also amended in line 44 on page 14 to give the words "outer diameter of said opposing ends" proper antecedent basis. Claim 14 is amended herein in line 63 on page 15 to depend from claim 12 instead of claim 11. These amendments are made to correct inadvertent typographical errors, and do not introduce new matter or narrow the scope of the claims.

II. Response to Examiner's Objection to Specification Informalities

The disclosure is objected to because the term "line I" is used on page 3, line 5, and the term "line II" is used on page 3, line 13. The specification is amended herein to replace "line I" with "line I-I" on page 3, line 5, and to replace "line II" with "line II-II" on page 3, line 13. It is

Express Mail No. EL936643593US
Attorney Docket No. 5603.02

believed that the amendment to the specification overcomes the objection, and such indication is respectfully requested.

III. Response to 35 U.S.C. § 112 Rejections

Claim 1 has been amended herein to delete the word “corresponding” in line 9 on page 13. Therefore, the element “at least one gasket” recited on page 13, line 9 of the subject application now has sufficient antecedent basis to overcome the rejection under 35 U.S.C. § 112, second paragraph. Claims 2, 3, 4, 5, 6, 7, 8, and 9 depend from and include all of the limitations of claim 1. Accordingly, it is believed that claims 2-9 are no longer indefinite under 35 U.S.C. § 112, second paragraph, for the same reason as claim 1.

For at least these reasons, it is believed that claims 1-9 are no longer indefinite under 35 U.S.C. § 112, second paragraph, and are therefore allowable, and such indication is respectfully requested.

IV. Response to 35 U.S.C. § 103 Rejections

Claims 1-19 are rejected under 35 U.S.C. § 103 as being unpatentable over U.S. Pat. No. 5,480,196 ('196) to Adams, Jr. in view of U.S. Pat. No. 4,752,208 ('208) to Iwata et al. In support of the rejection, it is stated in the OA that “Adams, Jr. discloses a pipe connection joint structure comprising opposing bell-formed ends (66, 68)” and “Iwata et al. teaches the use of corrugated pipe.” In further support of the rejection, it is suggested that the method of claims 17-19 are inherent in the combination of the '196 patent and the '208 patent.

It is respectfully submitted that neither the '196 patent nor the '208 patent, alone or in combination, teach or suggest a corrugated pipe connection joint involving corrugated piping with “bell formed ends” as required by claims 1, 10, and 17 of the subject application. To establish a prima facie case of obviousness, the prior art references when combined must teach or suggest all the claim limitations. See MPEP § 706.02(j).

The ‘196 patent does not address the problem of providing a corrugated pipe connection joint. Instead, the ‘196 patent discloses “a high strength, leak-proof coupling for ductile iron pipe for use in a trenchless pipe installation” see ‘196 patent, Col. 1, ll. 34-37. The ‘196 patent teaches machining an annular groove in each end of the abutting pipes so that the coupler can transmit substantial axial compressive loads between two lengths of pipe joined by the coupling. Because the invention disclosed in the ‘196 patent is to be used in trenchless pipe installation, it teaches “a coupling element capable of transmitting substantial axial compressive loads between two lengths of pipe joined by the coupling.” See ‘196 patent, Col. 1, ll. 45-47, and Col. 2, ll. 25, 26, 66.

As opposed to machining an annular groove in the inside of two ductile iron pipes to be joined together, independent claims 1, 10, and 17 of the present invention involve “bell-formed ends” in two sections of corrugated pipe. One embodiment of the invention involving bell formed ends is described in the subject application at page 6, lines 5-25. As the specification of the subject application teaches, bell forming is substantially different than machining. Moreover, a machined groove in steel piping does not suggest bell forming the ends of a corrugated section of pipe. See MPEP § 2143.01 (The mere fact that references can be combined or modified does not render the resultant combination obvious unless the prior art also suggests the desirability of the combination.) In fact, if the corrugated pipe connector of the subject application was substituted for the iron pipe coupling of the ‘196 patent, it would be rendered unsatisfactory for its intended purpose as the invention of the subject application is not subject to such extreme axial loads. See MPEP § 2143.01 (If the proposed modification would render the prior art invention being modified unsatisfactorily for its intended purpose, then there is no suggestion or motivation to make the proposed modification.)

It is also respectfully submitted that claims 17-19 are not anticipated by the prior art under the principles of inherency. The method claimed will be considered anticipated by a prior art device under the principles of inherency if the prior art device, in its normal and usual operation, would necessarily perform the method claimed. As previously stated, the invention

Express Mail No. EL936643593US
Attorney Docket No. 5603.02

disclosed in the '196 patent teaches machining an annular groove in each end of the abutting pipes so that the coupler can transmit substantial axial compressive loads between two lengths of pipe joined by the coupling. Because corrugated pipe generally has a small cross sectional area of material circumferentially around its inner wall, it is not suitable for machining an annular groove in each end of the abutting pipes. Therefore, the '196 patent combined with the '208 patent would not necessarily perform the method of claim 17 of the subject application.

For at least these reasons, it is believed that claims 1, 10, and 17 are patentable over the '196 patent and the '208 patent, alone or in combination, under 35 U.S.C. § 103(a) and are therefore allowable, and such indication is respectfully requested. Claims 2, 3, 4, 5, 6, 7, 8, and 9 depend from and include all of the limitations of claim 1. Claims 11, 12, 13, 14, 15, and 16 depend from and include all of the limitations of claim 10. Claims 18 and 19 depend from and include all of the limitations of claim 17. Accordingly, combining the '196 and '208 patents does not teach or suggest all the claim limitations of claims 2-9, 11-16, 18, and 19 of the subject application for at least the same reasons as claims 1, 10, and 17.

CONCLUSION

For at least the reasons discussed herein, claims 1-19 are believed to be in form for allowance, and such indication is earnestly requested. If there are any questions regarding the above, please contact the undersigned.

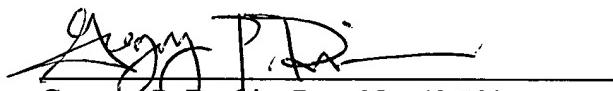
Attached hereto is a marked-up version of the changes made to the claims by the current amendment. The attached page is captioned "Version with markings to show changes made."

This Amendment is being filed on July 8, 2002, which is before the three month shortened statutory period. Accordingly, no fees are believed due with this Amendment; however, if any fees are required, please charge deposit account 04-1415.

Express Mail No. EL936643593US
Attorney Docket No. 5603.02

Signed at Denver, Colorado, this 8th day of July, 2002.

Respectfully submitted,



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Express Mail No. EL936643593US
Attorney Docket No. 5603.02

VERSION WITH MARKINGS TO SHOW CHANGES MADE

In the Specification:

The paragraph on page 3, beginning at line 5, has been amended as follows:

Fig. 1A is a partial section taken through line [I] I-I of Fig. 1 showing two adjacent corrugated pipe sections connected by a pipe connection joint according to the present invention having bell-formed ends joined by a first embodiment of a connector insert having flanges, a push-ring and two gaskets.

The paragraph on page 3, beginning at line 13, has been amended as follows:

Fig. 2A is a partial section taken through line [II] II-II of Fig. 2 showing one bell-formed end of one of the adjacent pipe sections shown in Figs. 1 and 1A.

In the Claims:

Claim 1 has been amended as follows:

1. (Amended) A corrugated pipe connection joint structure for joining two sections of corrugated pipe comprising:

opposing bell-formed ends[,];

a connector insert defining opposing ends and a push-ring;

at least one gasket positioned on at least one of said opposing ends of said connector insert; and

wherein said opposing ends of said connector insert are positioned in said bell-formed ends, with said [corresponding] at least one gasket forming a seal therebetween.

Express Mail No. EL936643593US
Attorney Docket No. 5603.02

Claim 10 has been amended as follows:

10. (Amended) A corrugated pipe connector insert for joining two sections of corrugated pipe defining opposing bell formed ends comprising:

a pair of opposing ends each defining an outer diameter;

at least one gasket positioned on at least one of said opposing ends having an outer diameter greater than said outer diameter of said opposing ends; and

a push ring disposed between said opposing ends having an outer diameter substantially equal to an outer diameter of the [said] bell formed ends.

Claim 14 has been amended as follows:

14. (Amended) The corrugated pipe connector insert of claim [11] 12, wherein said push-ring has a diameter of no more than approximately one inch greater than Ds.

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